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THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office**

June 01, 2004

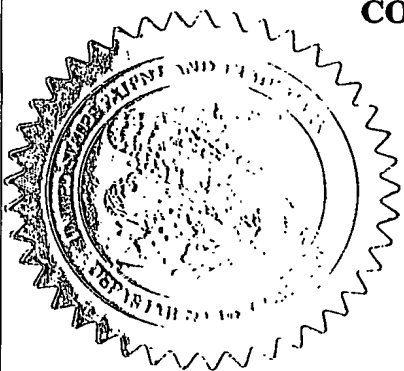
**THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM
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OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT
APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A
FILING DATE.**

APPLICATION NUMBER: 60/458,491

FILING DATE: March 28, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/09610

**By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS**



L. Edelen

**L. EDELEN
Certifying Officer**

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3-31 60958491.032803 *Alpro*

03/28/03

jc982 U.S. PTO

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PROVISIONAL APPLICATION COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(c).

DOCKET NUMBER: B01075.70038
Express Mail Label No. EV 208 517 785 US
Date of Deposit: March 28, 2003

jc979 U.S. PTO
60/458491
03/28/03

INVENTOR(S)/APPLICANT(S)

LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)
Stevens-Wright	Debbie		North Andover, MA
Amara	Ryan		Stoneham, MA
Brown	Erik		Allston, MA
MacAdam	David		Mullbury, MA

☐ Additional inventors are being named on the separately numbered sheets attached hereto.

TITLE OF THE INVENTION (280 characters max)

SHAPE SHIFTING ELECTRODE GEOMETRY FOR ELECTROPHYSIOLOGY CATHETERS

CORRESPONDENCE ADDRESS

CUSTOMER NUMBER:

23628

ENCLOSED APPLICATION PARTS (check all that apply)

- ☒ Specification - Number of Pages = 2
- ☐ Drawing(s) - Number of Sheets
- ☐ Application Data Sheet, See 37 CFR 1.76
- ☒ Return receipt postcard

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

- ☒ No
- ☐ Yes, the name of the U.S., Government Agency and the Government Contract Number are:

☐ Other:

METHOD OF PAYMENT (check all that apply)

- ☒ A check is enclosed to cover the Provisional Filing Fees.
- ☐ The Commissioner is hereby authorized to charge any additional fees or credit overpayment to Deposit Account 23/2825. A duplicate of this sheet is enclosed.
- ☐ Small Entity Status is claimed.

PROVISIONAL FILING FEE AMOUNT \$ 160.00

Respectfully submitted,

March 28, 2003
Date

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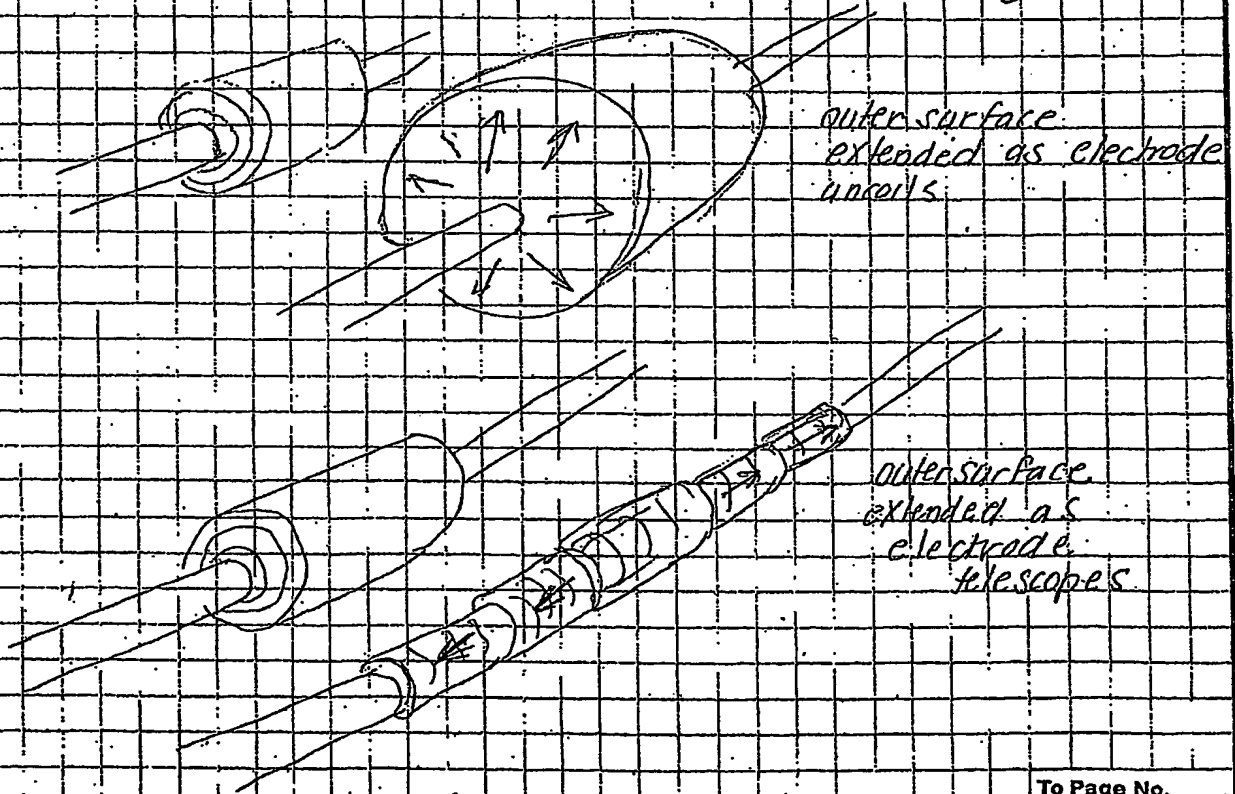
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TITLE Shape Shifting Electrode Geometry

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Morgan Analysis study showed that extending the surface of the electrode produces a larger lesion. The larger geometry pushes the point that the potential begins to drop off further into the domain. The reach of the potential field is larger for electrodes having an outer surface that extends out further into the domain, extending toward the boundaries of the domain.

For clinical reasons, it is undesirable to have an electrode that is excessively large. One concept would be to have an electrode that started off with a compact geometry when moving through the vasculature. At the site of energy application the outer surface of the electrode could be extended to improve the lesion depth as necessary.

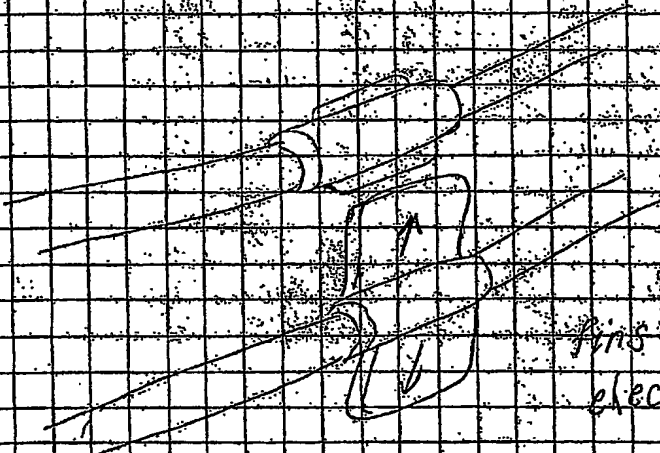


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TITLE Shape-shifting geometry

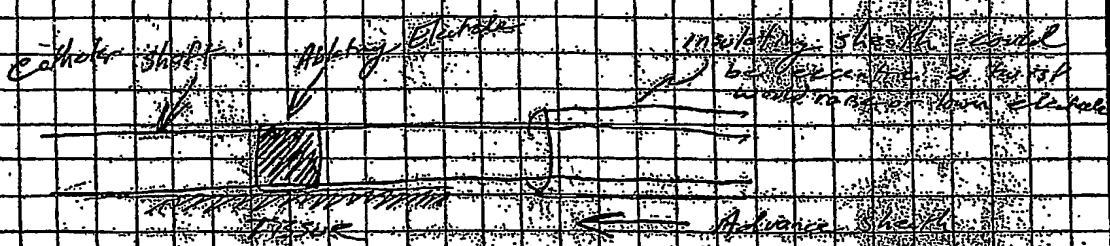
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fins extend out from
electrode surface

extending the reach
of the field

thus increasing the
lesion depth



cathode sheet

advancing electrode

insulating sheath

be separated by a small
distance from electrode

Don't
5/25/03

Witness
Belle

Advance sheath
to keep gap between
electrode and tissue
optimal gap in
presence of insulating sheath
tissue could be pulled away
from cathode

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